CLAIMS

1. A radiation imaging device comprising:

a geometric transformation parameter solving unit adapted to acquire, from among plural projected images of which projected angles of a radiation are different from others, geometric transformation parameters between at least the two projected images of which the projected angles of the radiation overlap each other;

a changing unit adapted to gradually change the geometric transformation parameters acquired by said geometric transformation parameter solving unit, within a predetermined range of the projected angles of the radiation; and

a body movement correction unit adapted to execute a correction of a body movement by executing geometric transformation to the plural projected images of which the projected angles of the radiation are different, by using the respective geometric transformation parameters changed by said changing unit.

2. A radiation imaging device according to Claim 1, further comprising an estimation unit adapted to estimate magnitude of the body movement by using the geometric transformation parameter acquired by said geometric transformation parameter solving unit,

wherein said body movement correction unit executes the correction of the body movement in a case where it is judged by said estimation unit that the magnitude of the body movement is equal to or larger than predetermined magnitude.

3. A radiation imaging device according to Claim 2, further comprising a tomographic image creation unit adapted to

create, in the case where it is judged by said estimation unit that the magnitude of the body movement is equal to or larger than the predetermined magnitude, a tomographic image by reconstructing the projected images of which the correction of the body movement has been executed by said body movement correction unit, and

create, in a case where it is judged by said estimation unit that the magnitude of the body movement is smaller than the predetermined magnitude, the tomographic image by using the projected images of which the correction of the body movement is not executed by said body movement correction unit.

4. A radiation imaging device according to Claim 1, wherein

said geometric transformation parameter solving unit acquires coordinates of corresponding points on at least the two projected images of

which the projected angles of the radiation overlap each other, and acquires, by using the acquired coordinates of the corresponding points, the geometric transformation parameters between at least the two projected images of which the projected angles of the radiation overlap each other, and

said body movement correction unit gradually changes, within the predetermined range of the projected angles of the radiation, the geometric transformation parameters acquired by said geometric transformation parameter solving unit, determines the changed geometric transformation parameters as geometric transformation parameters of geometric correction, and executes the geometric transformation to the projected images of which the projected angles of the radiation are within the predetermined range by using the determined geometric transformation parameters of the geometric correction.

5. A radiation imaging device according to Claim 1, wherein said geometric transformation parameter solving unit acquires the geometric transformation parameters between at least the two projected images of which the projected angles of the radiation overlap each other, by using any one of affine transformation, Helmert transformation,

secondary projective transformation and high-order polynomial transformation.

6. A radiation imaging device according to Claim 4, wherein said geometric transformation parameter solving unit acquires the coordinates of the corresponding points on at least the two projected images of which the projected angles of the radiation overlap each other, by using a matching method.

7. An image processing method comprising:

a geometric transformation parameter solving step of acquiring, from among plural projected images of which projected angles of a radiation are different from others, geometric transformation parameters between at least the two projected images of which the projected angles of the radiation overlap each other;

a changing step of gradually changing the geometric transformation parameters acquired in said geometric transformation parameter solving step, within a predetermined range of the projected angles of the radiation; and

a body movement correction step of executing a correction of a body movement by executing geometric transformation to the plural projected images of which the projected angles of the radiation are different, by using the respective

changed geometric transformation parameters.

8. An image processing method according to Claim 7, further comprising an estimation step of estimating magnitude of the body movement by using the geometric transformation parameter acquired in said geometric transformation parameter solving step,

wherein said body movement correction step is adapted to execute the correction of the body movement in a case where it is judged in said estimation step that the magnitude of the body movement is equal to or larger than predetermined magnitude.

9. An image processing method according to Claim 8, further comprising a tomographic image creation step of

creating, in the case where it is judged in said estimation step that the magnitude of the body movement is equal to or larger than the predetermined magnitude, a tomographic image by reconstructing the projected images of which the correction of the body movement has been executed in said body movement correction step, and

creating, in a case where it is judged in said estimation step that the magnitude of the body movement is smaller than the predetermined magnitude, the tomographic image by using the

projected images of which the correction of the body movement is not executed in said body movement correction step.

10. An image processing method according to Claim 7, wherein

said geometric transformation parameter solving step is adapted to acquire coordinates of corresponding points on at least the two projected images of which the projected angles of the radiation overlap each other, and acquire, by using the acquired coordinates of the corresponding points, the geometric transformation parameters between at least the two projected images of which the projected angles of the radiation overlap each other, and

said body movement correction step is adapted to gradually change, within the predetermined range of the projected angles of the radiation, the geometric transformation parameters acquired in said geometric transformation parameter solving step, determine the changed geometric transformation parameters as geometric transformation parameters of geometric correction, and execute the geometric transformation to the projected images of which the projected angles of the radiation are within the predetermined range by using the determined geometric transformation

parameters of the geometric correction.

11. An image processing method according to Claim 7, wherein said geometric transformation parameter solving step is adapted to acquire the geometric transformation parameters between at least the two projected images of which the projected angles of the radiation overlap each other, by using any one of affine transformation, Helmert transformation, secondary projective transformation and high-order polynomial transformation.

12. An image processing method according to Claim 10, wherein said geometric transformation parameter solving step is adapted to acquire the coordinates of the corresponding points on at least the two projected images of which the projected angles of the radiation overlap each other, by using a matching method.

13. A computer program for causing a computer to execute:

a geometric transformation parameter solving step of acquiring, from among plural projected images of which projected angles of a radiation are different from others, geometric transformation parameters between at least the two projected images of which the projected angles of the radiation overlap each other;

a changing step of gradually changing the geometric transformation parameters acquired in said geometric transformation parameter solving step, within a predetermined range of the projected angles of the radiation; and

a body movement correction step of executing a correction of a body movement by executing geometric transformation to the plural projected images of which the projected angles of the radiation are different, by using the respective changed geometric transformation parameters.